

## **Scientific Method I: Laboratory Experience** **Distribution List**

### Description

Introductory courses in science that focuses on the core concepts of scientific literacy. The course will integrate methods of discovery and examples of data-driven decision making into lectures. The laboratory portion will emphasize problem-based or inquiry-based learning.

### Core Curriculum Objectives

Each lab course in the distribution list must meet the following criteria:

1. Demonstrated, authentic problem-solving.
2. Actual or simulated (virtual) exercises in the laboratory.
3. Student engagement in data gathering and analysis.
4. Student data display and representation in the laboratory.
5. Scientific communication in writing or oral/visual student presentations.

### Criteria

- Students will take at least 7 hours in sciences courses, at least one of them a 4-hour course with a laboratory experience (or a 3-hour lecture course with a 1-hour lab). The second course may be taken in the Scientific Method Grand Challenges of Science Distribution List.
- The Scientific Laboratory Courses may be offered at the 1000 or 2000 level. The second course (which may include a course from the Scientific Method Grand Challenges of Science DL) may be taken at any level.
- Department Requirements: The department must offer a BS degree and have the capacity to offer laboratory work for undergraduates.

### Justification

- “As inhabitants of a physical world, students require knowledge of the natural sciences, which in turn requires familiarity with the scientific method, standards of evidence, and the other tools necessary for interpreting data in the context of a hypothesis. Students will learn to observe, analyze, and quantify factors such as physiological, environmental, mechanical, and psychological phenomena. Knowledge of their participation in natural systems will provide students with a rich awareness of the interdependence of all physical systems while the skills acquired in their examination will enable students to cultivate responsible habits in the pursuit of a healthy life.”